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10/553,919	10/20/2005	Jianli Shi	NL 030488	1359

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EXAMINER
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LANGMAN, JONATHAN C

ART UNIT	PAPER NUMBER
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1794

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12/04/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,919	<b>Applicant(s)</b> SHI ET AL.	
	<b>Examiner</b> JONATHAN C. LANGMAN	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,9-17 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,9-16 and 19 is/are rejected.
- 7) ☒ Claim(s) 5 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 21, 2009 has been entered.

### ***Claim Objections***

Claim 17 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 5. Claim 17 states that the second layer comprises mono-aluminum phosphate binders filled with the inorganic particles. Claim 5 states that the second layer comprises inorganic particles (from claim 1) and that the second layer comprises mono-aluminum phosphate binders. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 10, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 9-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bouloud (US 5,390,432) in view of Vondracek et al. (US 3,551,183).

Regarding claims 1-3, and 10, Bouloud et al. teaches coatings on the interior surface of a steam chamber of a steam pressing iron. The covering on the bottom of the chamber includes a first layer 11 and a second layer 20, wherein the layer 20 is constituted by a water permeable fibrous (porous) material having hydrophilic properties (col. 3, lines 60-65). The first layer 11, is preferably chosen to have good thermally insulating properties, and Bouloud teaches that enamel is a preferred embodiment (col. 3, lines 1-12). Enamel is taught by the applicant to be preferred for the first coating, therefore it is said to also be inherently "essentially impermeable to water" and "thermally insulating". A material and its properties are inseparable, therefore it is

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expected that enamel will be impermeable to water. Furthermore Bouloud teaches the use of other materials that are impermeable to water such as cements, calcium carbonate, paints, carbonates and metallic oxides, thus reading upon the instant claim 1 limitation of the first layer being “essentially impermeable to water”.

The second layer of Bouloud comprises a screen or a fibrous mat (porous), and in one embodiment the screen is coated by a hydrophilic material, preferably it is coated in its entirety with a layer of sodium silicate (col. 3, lines 54-60).

Bouloud does not teach the introduction of clay or alumina particles in this second layer.

Vondracek teach a steam chamber of a domestic appliance comprising a coating of sodium silicate. The coating has the addition of hydrated alumina particles. The coating is cured and dehydrated (col. 3, lines 30-35) resulting in an alumina and sodium silicate coating. The addition of alumina particles improves the physical strength of the sodium silicate coating (col. 3, lines 45-46), and that the coating decreases the solubility of the coating which is a desirable characteristic of coatings in the steam chamber (col. 3, lines 8-31). Vondracek go on to teach that unmodified sodium silicate (as taught by Bouloud) will have a problem with flaking (a deleterious effect known in the art), however by adding alumina to the sodium silicate, this flaking does not occur, and thicker coatings may be deposited (col. 3, lines 45-60).

It would have been obvious to a routineer in the art to add alumina to the sodium silicate second coating of Bouloud, in order to increase the strength of the coatings, as well as to decrease flaking, and allow for the deposition of thicker coatings which is a

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particularly attractive advantage in the art as taught by Vondracek. The addition of alumina would further be obvious as Vondracek teaches that the addition of alumina results in a decrease of water solubility.

Vondracek go on to teach that colloidal clays may be used (col. 4, lines 20-25) to aid in the deposition of sodium silicate coatings.

It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to add clays to the sodium silicate layer of Bouloud in order to aid in the deposition of sodium silicate, as is known in the art.

Regarding claim 9, Bouloud is silent to the thickness of the respective layers, however thicknesses of respective layers, including those instantly claimed are an obvious choice to a routineer in the art and well within the grasp of a routineer in the art. It would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the thicknesses of the first and second layers for the intended application, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 11, since the two layers are in contact with one another and subsequently deposited, they are implicitly adhered to one another (If you turn the device of Bouloud upside down the layers will not separate).

Regarding claims 12-15, Bouloud teaches that the first layer may be sodium silicate (col. 3, lines 7) and the second layer comprises sodium silicate (col. 3, lines 57), they are said to be similar compositions. Sodium silicate in the first layer is said to be to

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some degree impermeable to water and thermally insulating. The addition of hydrated alumina or colloidal clay is taught to be an obvious modification to the layer sodium silicate layers of Bouloud and results in a hydrophilic layer as described above.

The instant limitation of selecting different binder to filler ratios and selecting different filler particles sizes for each of the first and second layers to determine the essentially impermeable and hydrophilic characteristics are product by process limitations. The layers of Bouloud are expressly impermeable to water, and are expressly hydrophilic and therefore are said to have the same structure as that which is instantly claimed.

Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.”, (In re Thorpe, 227 USPQ 964,966). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product (In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983), MPEP 2113).

Regarding claim 16, Boulud teaches that all the materials utilized are selected in a manner to withstand thermal conditions normally existing in the chambers (col. 5, lines 5-10) and thus are thermally stable.

Regarding claim 19, the claim is a product by process claim, for reasons stated above the product of Boulud et al. is substantially similar to the product as presented in instant claim 1 therefore it is said to anticipate it. See the product by process case law applied above. Furthermore, Bouloud teaches that it is known and obvious in the art to cure sodium silicate coatings to obtain a more completely reacted coating (col. 3, lines 30-45).

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bouloud (US 5,390,432) and Vondracek et al. (US 3,551,183), as applied to claims 1-3, 9-16 and 19 above, and further in view of Louison et al. (US 4,822,686).

Bouloud and Vondracek teach a steam chamber of comprising an aluminum baseplate coated with a base coating of enamel. Bouloud is silent to the enamel coating comprising inorganic oxides.

Louison et al. teach an enamel coating for soleplates comprising aluminum (col. 47-55). Louison have found that when coating aluminum base plates with typical enamels, frittable at temperatures of about 600°C, that air micro bubbles present in the aluminum base plate escape from the aluminum base plate and blister the enamel coating (col. 2, lines 24-30). Louison et al. recognize that when coating enamel



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thereon, an enamel frit which is frittable at a temperature below 500 degrees is desirable in order to prevent blistering and deformation of the baseplate (col. 3, lines 20-25). The enamel frits are taught to comprise inorganic oxides (col. 3, lines 15-20).

It would have been obvious to a person having ordinary skill in the art at the time the present invention was made to use the low frittable enamels of Louison, which comprise inorganic oxides, as the enamel coatings of Bouloud in order to prevent blistering and deformation of the aluminum base plate.

Although this enamel coating of Louison is taught to be on the outside of the aluminum soleplate steam chamber, and not on the inside of the steam chamber as described by Bouloud, A routineer in the art would expect that the problem of blistering and deformation, taught by Louison, would be exacerbated on the inside of the steam chamber, as the inside of the chambers encounter higher operating temperatures then the outside. A routineer in the art would have appreciated the work of Louison, which shows that typical enamel frits blister when exposed to higher operating temperatures due to the air bubbles located in the aluminum sole plates, and would have included the low temperature frittable enamels, which comprise inorganic oxides, as the coatings for the inside of the steam chamber as taught by Bouloud.

### ***Response to Arguments***

In regards to Bouloud I in view of Vondracek the rejections are maintained. The applicant argues that Vondracek teaches a single layer, and therefore it would not have

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been obvious to apply this single layer to anything but the aluminum substrate. This argument is not found persuasive. Vondracek was looked to for its teaching of either aiding in the deposition of sodium silicate, or for reinforcing sodium silicate, in order to reduce flaking. The applicant has failed to show why a routineer in the art would not have modified the sodium silicate coatings of Bouloud I, in light of the teachings of Vondracek.

The applicant refutes the examiners position, and states that Vondracek is clear that the benefits are provided by adding hydrated alumina to the sodium silicate solution that is sprayed or otherwise deposited onto the surface of the chamber (col. 2, lines 59-62). The examiner does not find this teaching persuasive. It is the examiners position that the addition of alumina or clay to sodium silicate would have provided benefits to the sodium silicate coating of Bouloud, regardless of the substrate.

Vondracek teaches that "a reaction occurs between the sodium silicate and hydrated alumina and that the reaction produces less soluble compounds" (col. 3, lines 14-17). Vondracek also teaches "the addition of hydrated alumina also improves the physical strength of the coating" (col. 3, lines 45-46). Vondracek also teaches "that thicker coatings may be deposited without the flaking problem that is encountered in attempts to deposit the thicker deposits of the unmodified sodium silicate" (col. 3, lines 45-49). No where does Vondracek teach away from using alumina modified sodium silicate on other substrates. It is clear from the teachings of Vondracek that the addition of alumina to sodium silicate will result in an improved coating for steam chambers.

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The applicant argues that a routineer in the art would not look to Vondracek, since Vondracek only teaches one layer. The Examiner disagrees. Note that while Vondracek does not disclose all the features of the presently claimed invention (a two layer system), Vondracek is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather Vondracek teaches a certain concept, namely that alumina particles may be added to sodium silicate coatings in order to increase strength (col. 3, lines 1-46) when compared to unmodified sodium silicate coatings; to increase serviceable temperatures (col. 3, lines 39-42) when compared to unmodified sodium silicate coatings; produce less soluble compounds (col. 3, lines 15-31) when compared to unmodified sodium silicate coatings; and also to alleviate the problems of flaking (col. 3, lines 45-50) when compared to unmodified sodium silicate coatings; and furthermore that colloidal clays may be added to sodium silicate in order to aid in deposition (col. 4, lines 19-24), and in combination with the primary reference, which discloses an unmodified sodium silicate layer, discloses the presently claimed invention.

Furthermore, the applicant has not shown why it would not have been obvious to use colloidal clay to aid in the deposition of the sodium silicate coatings of Bouloud, as is known in the art.

The applicant argues that Vondracek does not provide any showing that the respective layers provide any benefits other than those derived by depositing the layers

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directly to the steam chamber. For reasons of record this argument is not found persuasive.

The applicant argues that the Examiner uses impermissible hindsight reconstruction to arrive at the instant claims. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In regards to the rejections over WO (Bouloud II) in view of Verweij, the rejections have been withdrawn. WO teaches coating a sodium silicate layer with an acid treatment of mono-aluminum phosphate that may comprise colloidal silica. WO teaches that the colloidal silica reinforces the sodium silicate layer. WO fails to teach or render obvious that the mono-aluminum phosphate binders may comprise alumina or clay particles.

Verweij was looked to for their teaching of equivalence of alumina and silica inorganic particles. However, Verweij is essentially forming a layer of silica or alumina particles that are treated with the mono-aluminum phosphate binders. There is no

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motivation found in Verweij, to modify the silica inorganic particles of WO to comprise alumina, as Verweij teaches these alumina particles to form a separate and distinct layer on an aluminum soleplate, and not to reinforce a sodium silicate layer, as disclosed by WO.

### ***Allowable Subject Matter***

Claims 5 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN C. LANGMAN whose telephone number is (571)272-4811. The examiner can normally be reached on Mon-Thurs 8:00 am - 6:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL

/Timothy M. Speer/

Primary Examiner, Art Unit 1794